data), then the values in Table 7 of Appendix A are changed to those reported in Table 7A of Appendix A. That is, the X-Factor for the LECs' interstate access services increases from 7.33 percent (Table 7, Appendix A) to 8.24 percent (Table 7A, Appendix A, p. 30). Thus, the results in Table 7A further support the fact that the calculations of TFP and the X-Factor for the LECs' interstate access services, as shown in Appendix A (Table 7), were made on a very conservative basis.

Issue 1k (p. 26)

> Is there a valid distinction between regulated and non-regulated productivity, or the productivity associated with specific services, such as video dialtone, or groups of services, for the purposes of calculating a TFP index and an input price index? If so, does a satisfactory method exist to account for such differences?

Response/Comments

There are no data available to support such a distinction. The Performance-Based Model uses publicly reported data for the regulated business of the LECs, but comparable data for their unregulated businesses are not accessible. In any event, only the regulated services and costs are relevant to TFP for LEC price cap regulation.

Issue 1l (p. 27)

> How do state and federal universal service and other subsidy programs implemented by the LECs affect the industry's TFP? Should the TFP be adjusted to account for such effects?

Response/Comments

The theory of public finance holds that if there is a public interest in some service, that service should be subsidized in a manner that does not distort price signals in competitive

markets. This principle calls for subsidy of universal service from the general public tax revenue in the region where the public benefits of the subsidy are received. There is thus no economic justification for interjurisdictional subsidies of universal service.

Universal service programs add to the cost of regular service in the subsidizing classes of service. The original concept that underlay cross-subsidy in telecommunications was that a "deserving" class of customers of the local exchange carrier should receive services at lower rates than marginal costs would justify, with the shortfall financed by higher markups to other services provided to other customers (e.g., long-distance customers). This practice, held to be justifiable as a public service obligation, was to levy the costs of the subsidy on the publicly sanctioned long-distance monopoly and its customers. These conditions no longer exist today. As presently administered, part of the cost of universal service is subsidized by customers of some of the competitive enterprises serving the long-distance market. The subsidies, therefore, distort competitive incentives in the competitive telecommunications markets, as well as give false price signals in the regulated market for local service. As the LECs are permitted to compete in the long-distance market, these subsidies will distort competition further by imposing a cost disadvantage on some long-distance carriers by forcing them to subsidize the customers of the local exchange carriers. The subsidies from the customers of the IXCs are anticompetitive and should be eliminated. To the extent that the costs of universal services and other subsidies continue to be imposed by regulatory authorities, they should be accounted for separately in the Z Factors in the LEC price cap index.

Issue 1m (p. 28)

Should the productivity of firms other than LECs be included in a TFP-based X-Factor calculation?

Response/Comments

No. The role of the price cap LECs, telephone monopolies in local markets, is unique. The TFP and X-Factors for the LECs, for both interstate and state regulatory purposes, should therefore be based only on the performances of the large locally dominant telephone companies that experience substantial economies of scale associated with increasing traffic on the local network. The inclusion of other enterprises in the computation of the TFP and X-Factor for the LECs is therefore inappropriate.

Issue 1n (p. 29)

Are there superior alternatives to Christensen's method of calculating TFP?

Response/Comments

The Performance-Based Model sponsored by AT&T, for calculating TFP and the X-Factor for the LECs' interstate access services, is superior to Christensen's method used in the USTA model. The reasons for the superiority of the Performance-Based Model are fully discussed in Appendix A.

Historical Revenue Method

Issue 2a (p. 30)

> **Is the Historical Revenue Method superior to a TFP-based approach for developing an X-Factor?**

Response/Comments

The Performance-Based Model, as described in Appendix A, for computing TFP is preferable to the Historical Revenue Method (AT&T Direct Model) provided that sufficient data are available to measure the LECs' TFP and X-Factor for interstate access services. The Performance-Based Model does share certain important features with the Historical Revenue Method, including their common reliance on publicly available data describing the actual performance of the LECs, their fully revealed methods of calculation, and their X-Factor measurements separating interstate services from other services provided by the LECs. On the other hand, for the reasons stated in Appendix A, the TFP-based approach followed in the USTA model is entirely deficient as a method for measuring the LECs' TFP and X-Factor. The Historical Revenue Method (Direct Model) is thus preferable to the USTA model.

Historical Price Method

Issue 2b (p. 33)

> **Is the Historical Price Method superior to a TFP-based approach for developing an X-Factor?**

Response/Comments

In general terms, the Historical Price Method is inferior to TFP methods. However, that method does identify several factors that must be dealt with in a satisfactory TFP model. Most prominently, it establishes the necessary role of the input price differential in the X-Factor for the LECs' price cap index. It further illustrates the retrospective adjustment of historical cost data for changes in regulatory requirements, i.e., for the Z-Factors in the price cap index.

For the Performance-Based Model, the retrospective adjustment of costs was judged to be infeasible, partially because to do so would violate the principle that the actual cost and revenue performance of the LECs enter into the TFP calculations. It is possible within the Performance-Based Model, however, to apply the retrospective adjustments to costs in accordance with the Z-Factors to measure the partial effects that such changes would have had on costs, TFP, and the X-Factor. The resulting measures would not be appropriate, however, for direct inclusion in the LEC price cap index.

2: CONSUMER PRODUCTIVITY DIVIDEND

Issue 2c (p. 34)

> **Should the X-Factor in the long-term price cap plan include a consumer productivity dividend?**

Response/Comments

There are valid reasons, as previously recognized by the FCC, to include a Consumer Productivity Dividend (CPD) in the X-Factor for the LECs. I believe it is advisable to retain the modest CPD (0.5 percent) that now exists. The inclusion of the CPD provides an additional incentive for each LEC to improve its productivity performance above the industry average. As noted before, the X-Factor determined by the Performance-Based Model is quite conservatively stated, and it is likely that further refinements in that model and additional data from the LECs would produce a higher X-Factor. In particular, the adjustment of the TFP measures for data relating to jurisdictional separations between interstate and other regulated services results in a higher X-Factor, as Table 7A (Appendix A) shows. Therefore, there is quantitative evidence that the LECs can accommodate a "stretch" factor such as the CPD.

Moreover, to the extent that the X-Factor reflects LEC performance prior to price cap regulation (as it did when price cap regulation was initiated), then it would be appropriate to factor in a CPD for that period. Because the X-Factor in the present price cap plan is generous, the LECs have remaining opportunities to achieve further efficiencies. There are even further opportunities in the future -- through technological advances and learning

efficiencies -- for the LECs to improve their productivity above that realized in the past, and the inclusion of a CPD recognizes that circumstance as well.

3: UPDATING OF THE X-FACTOR

Issue 3a (p. 35)

> Should we base the X-Factors in the long-term plan on a moving average, or should we establish fixed X-Factors to be reviewed and revised periodically in performance reviews?

Response/Comments

It is recommended that the X-Factors in the long-term price cap plan be established for a three-year period, with a detailed performance review to be undertaken in the third year and "sanity check" reviews to be undertaken annually. The X-Factor under this plan would be updated based on the performance of the LECs in the prior eight year period. There is no compelling reason for a lag: the performance of the national economy as reflected in the productivity and input price movements change less rapidly than the performances of the LECs, and the LECs' performance is reported annually or more frequently in ARMIS and the LECs' tariff filings. Therefore, the data entering the price cap formula would be contemporary except for those capturing the performance of the national economy. Under this approach, the productivity growth and input price movements in the national economy would be projected forward at their average rates for the most recent eight-year period reported.

There is no need to adopt a moving average procedure, as proposed by USTA, to measure the LECs' X-Factor. Any supposed advantages from a moving average would be captured

in our recommended approach -- that the X-Factor be adjusted, and formally reviewed and verified every three years for the actual performances of the LECs. This practice avoids some problems that might occur under a proposal that would eliminate or delay the LEC performance review. Prominent among the problems in USTA's moving average proposal is that the X-Factor would need to be updated annually. In the light of the unstable and inaccurate results reported through the USTA model, it would be premature to put the measurement of TFP in an "automatic pilot" mode at this time. The discipline of an explicit LEC performance review is necessary to prevent erroneous measures of performance, or erroneous inputs to the computations of those measures. It has only been through the process of discovery and subsequent detailed and informed review of the data and methods in the USTA model that certain errors and idiosyncracies have been detected. These errors have improperly reduced the measured X-Factor for the LECs. If undetected, these errors would have imposed an unintended burden on ratepayers, and provided an unwarranted windfall to the LECs. At present, those errors remain unacknowledged and uncorrected. (See my critique of the USTA model in Appendix A.)

A three-year update to the X-Factor, as part of the triennial LEC performance review recommended here, would allow the review process itself to be adjusted as experience under the plan creates confidence in the integrity of the data and methods used to measure the X-Factor.

Issue 3b (p. 36)

> If we adopt moving average X-Factors, how many years of data should be included in the average?

Response/Comments

As I indicated in the response to Issue 3a above, a moving average approach is not appropriate. With respect to the time period for measuring the LECs' X-Factor, a nine-year period is suggested as the appropriate period in the triennial performance review recommended above. A period longer than three years is needed to smooth out short-term effects as to the performance of the LECs. However, given the uncertainty of the measures and the need to confirm that the LEC price cap plan is working effectively, a nine-year interval, or a five-year period as recommended for the moving average by Southwestern Bell, would be too long for the price cap plan to go without review and adjustment. Indeed, the possible problems with such a long period could discredit the concept of incentive regulation by allowing excessive profits and/or declines in the quality of service. The triennial review plan would function more smoothly if the data were adjusted to a calendar year basis to maintain continuity with the historical data on which the TFP and X-Factor measures are necessarily based.

Issue 3c (p. 37)

> If we adopt moving average X-Factors, should there be any lag? If so, how long should that lag be?

Response/Comments

The lag issue is less important in a triennial review regime than in a moving average regime. As noted above, only the performance of the national economy is likely to be reported with a lag. That performance does not change much from year to year, and its average value over an eight-year period would be quite insensitive to dropping an earlier year and adding a later year. Data entering the LEC price cap formula would be current through the preceding year, except for those data capturing performance of the national economy. Under a triennial review plan, the productivity growth and input price movements in the national economy could be projected forward at their average rates for the most recent reported eight-year period. This procedure would introduce a lag where needed, but would permit the most recent performance of the LECs to be included in the calculations. Absent a return to the inflationary pattern of the late 1970s and 1980s, the triennial review should suffice. If inflation should reach high single digit levels, the entire price cap plan may need to be revisited. This procedure permits using the most current data in the X-Factor calculation, without artificially excluding available data.

Issue 3d (p. 37)

> If we adopt a moving average X-Factor based on TFP, should there be one moving average for the X-Factor, or separate moving averages for distinct components of the TFP calculation?

Response/Comments

An integrated computation of the interstate X-Factor is recommended, with a triennial adjustment. As stated above, a moving average approach is not recommended.

Issue 3e (p. 38)

> If we adopt fixed X-Factors, on what time period should the studies to determine the X-Factor be based?

Response/Comments

It is recommended that the time period for the X-Factor should be based entirely on post-divestiture data. The 1984 data point should be omitted, in accordance with the Commission's views in its First Report and Order. An exception should be made in the case of the depreciation reserve. The 1984 value of the depreciation reserve is required to calculate the change in that reserve for 1985, which in turn is required to separate input expenses between capital and materials. The inclusion of pre-divestiture data would distort the conclusions concerning the X-Factor, while the 1984 data point has been determined by the Commission to be unrepresentative.

Issue 3f (p. 38)

> If we adopt fixed X-Factors, when should the next performance review be scheduled?

Response/Comments

It is recommended that the next performance review begin in the third calendar year following the year in which changes to the LEC price cap plan have been adopted.

4: NUMBER OF X-FACTORS

Issue 4 (p. 39)

> Should there be multiple X-Factors in the long-term price cap plan and, if so, how many should there be and how should they be determined?

Response/Comments

It is recommended that there be only two X-Factors. Based on the choices of the LECs during the current price cap regime under the FCC's interim order (First Report and Order), only two options appear necessary. The lower X-Factor should be set at 7.8 percent (including the CPD) and be subject to the sharing requirement. The higher X-Factor should be 8.8 percent with no sharing obligation.

5: SHARING REQUIREMENTS AND ALTERNATIVES TO SHARING

Issue 5a (p. 43)

> **If we establish a plan in which LECs have a choice of X-Factor, what incentive mechanism should be used to encourage each LEC to choose an X-Factor that is appropriate for its economic circumstances? Is it possible to develop an incentive mechanism other than one based on sharing?**

Response/Comments

The sharing mechanism is needed for the low X-Factor(s) in order to provide an incentive for each LEC to choose an X-Factor that is appropriate for its own economic circumstances. At present there appear to be no practical alternatives to sharing that could be used to fashion a plan in which the LECs have an incentive to choose an appropriate X-Factor. An important reason why sharing should be retained is the currently unresolved state of measurement of TFP and the X-Factor. So far, the USTA TFP model has not provided valid results, and no alternative TFP measurement plan has yet been adopted by the FCC. I believe that the Performance-Based Model provides a valid and reliable method for measuring the LECs' X-Factor, but that method must of course be reviewed by the Commission.

In view of these measurement limitations, it would not be reasonable at present to permit additional pricing flexibility for carriers electing a more challenging higher X-Factor. It is recommended that pricing flexibility for LECs should not be increased immediately. Only when it is clear that *actual* competition exists in their markets should the LECs' pricing flexibility be increased, and only at that time should the elimination of sharing be contemplated.

Measurement of competition in a market depends on the definition of the market itself, as well as a theory that explains how that market functions. These issues are addressed in AT&T's response to the Second Further Notice of Proposed Rulemaking in CC Docket No. 94-1.

The theory of contestable markets suggests that the threat of competition may be adequate to ensure that pricing by enterprises with market power will not be excessive. There are important peculiarities of the LECs' circumstances that are not recognized in that theory, however. First, the LECs own the critical resource (bottleneck) in the local market: the local network. Proposals for competition in local markets assume that the local network will be made accessible to potential competitors under conditions of regulated access pricing. This fact should be incorporated to modify the theory of contestable markets to include some of the behavioral assumptions recognized in Laffont and Tirole's (1993) discussion of access pricing. The fact is that even actual competition, when it is subject to administrative delays, and dickering over matters such as interconnection standards, can take a long time to become effective. Indeed, its partial onset may itself give rise to further delays from these sources. There is exactly such evidence in the electric power industry, where the non-utility generators have gained partial access to the market through transmission facilities owned by the regulated utilities. In that instance, rates have increased rather than decreased. The case for pricing restraint based on potential competition in contestable market theory may not transfer unmodified to the local markets for telephone services.

The second point is that the LECs may be simultaneously entering the long-distance market in competition with the IXCs'. Therefore, during the period when competition is being introduced, the LECs, through their charges for access to the IXCs and local market competitors, will have considerable influence on the costs of their competition. Once again, this phenomenon is not analyzed in the conventional theory of contestable markets.

Issue 5b (p. 44)

> If we use sharing as an incentive mechanism, what sharing requirements should be associated with those X-Factors for which sharing is required? How should we structure sharing bands?

Response/Comments

To achieve simplicity in administering the sharing mechanism, it is recommended that there be only two X-Factors. These should be based on the X-Factor for the LECs' interstate access services developed in the Performance-Based Model. The lower X-Factor should be 7.8 percent (including the 0.5 percent CPD). With the selection of the lower X-Factor, a LEC should be subject to 50 percent sharing if its rate of return is in the range of 12.25 to 13.25 percent, and 100 percent sharing for rates of return at or above 13.25 percent. This recommendation maintains the same rate of return ranges that presently exist and assumes no change in the FCC's presently prescribed rate of return for the LECs. If the Commission's prescribed LEC rate of return should change with changes in financial conditions, the rate of return ranges for sharing should be adjusted to match the changed return level. The higher X-Factor should be 8.8 percent, and no sharing requirement should apply to a LEC choosing that option.

Issue 5c (p. 44)

> **If we establish a plan in which LECs have a choice of X-Factor, how much flexibility should LECs have to change their choice? Should we continue to allow annual selection?**

Response/Comments

It is recommended that the LECs must elect a single X-Factor for the duration of the price cap period until the next triennial review. When a LEC has the option of changing its X-Factor annually, it is possible for that LEC to adjust its investment activities and cost realizations to "play the system". For example, a LEC may elect the lower X-Factor in the first year and take large write-offs and restructuring charges in that year, so that there are no returns to be shared. For the second and third years, the LEC could then elect the higher X-Factor (which has no sharing requirements) and thus enjoy the benefits of its earlier restructuring in the form of uncapped returns.

There are two ways to prevent this behavior. One way, more difficult administratively, is to have several sharing bands. The simpler way is to require the LECs to elect a single X-Factor for the duration of the price cap period, as recommended here. It should be noted that under the theory of incentive regulation which underlies the price cap system, the elective contracts are structured so that they prevail during the entire price cap period. Otherwise, the incentive for the LECs to reveal their true costs and productivity improvement prospects are dulled.[14]

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[14] Laffont and Tirole (1993).

Issue 5d (p. 46)

> Instead of allowing LECs to choose among several X-Factors, should we establish criteria and procedures by which we can assign an appropriate X-Factor to each LEC?

Response/Comments

It is recommended that the LECs be permitted to elect X-Factors as contemplated in the principles of incentive regulation. Assignment of X-Factors to each LEC would unduly complicate the regulatory process, and very likely engender a profusion of objections and protests from various LECs. The administrative simplicity of price cap regulation would be reduced substantially if X-Factors were assigned.

Issue 5e (p. 47)

> To what extent and under what conditions would it be possible to eliminate the sharing mechanism from the long-term price cap plan?

Response/Comments

The Commission should not contemplate the elimination of the sharing mechanism until such time that effective competition in the local markets of the LECs is a documented reality, and is verified by the Commission.

Issue 5f (p. 48)

> Should the low-end adjustment mechanism be eliminated?

Response/Comments

It is recommended that the low-end adjustment mechanism be eliminated. In cases where

unforeseen circumstances seriously affect the financial condition of individual LECs, there are adequate provisions for special relief. To facilitate the LECs' avoidance of responsibility for bad business decisions, as the low-end adjustment mechanism does, is to subvert the discipline of the market and undermine the incentive objectives of the price cap system.

6: COMMON LINE FORMULA

Issue 6a (p. 50)

> Under what circumstances would the adoption of a particular X-Factor method justify elimination of a separate common line formula?

Response/Comments

The principle of price cap regulation, as applied to the LECs by the Commission, is that the prices charged by the LECs for telecommunications services should rise no more than an index of economy-wide prices of goods and services. Adjustments for differences in productivity growth and differences in input prices between the LECs and the national economy are taken into account in implementing this plan. The services under the price cap plan should be the quantities of services considered by the customers of the LECs who are confronted by the prices. There are thus two aspects to implementation of the price cap plan that need to be determined: **what services to price** and **how to price them**. The "how" issue is straightforward under price cap incentive regulation: the prices are to be based on economy-wide prices adjusted for the differential circumstances of the LECs. In principle, the "what" issue should be equally simple: interstate access minutes, whose

prices are confronted by the IXCs, should be capped at the economy-wide rate, properly adjusted.

In practice, the Commission has introduced another objective in the determination of the price of interstate access services. This objective is that part of the cost of the local loop should be recovered partially from interstate access revenues, which are regulated by the Commission, and partially from other service revenues, which are not. The allocation and recovery procedures reflect **technology, history** and perhaps efforts to achieve rough **equity among LECs, and between the LECs and the IXCs**. Under the present "Balanced 50/50" plan, for example, the Carrier Common Line Charge is capped so as to cause the price cap index (PCI) to decline at a rate that is faster than the X-Factor by itself would dictate. However, the sharing of interstate revenues with the LECs may exceed or fall short of the local loop cost assigned for recovery to interstate access. These are the effects of adding the -g/2 term into the PCI formula for the interstate access basket.

These cost recovery objectives -- which are supply-side consideration -- ideally should be addressed separately, not in the "how to price" determination, nor in the "what to price" determination, which are demand-side issues. The interstate X-Factor should be applied directly to the output measure for interstate services. This procedure is entirely consistent with the principles of price cap regulation and productivity measurement.

The present hybrid system for the common line formula introduces two kinds of distortions between the practice most conforming with the operation of a competitive

market, and the current practice. The first distortion is based on the claim of the LECs that they should share in the interstate revenues that are derived from interstate traffic on the **local loop**. There is no economic basis for this claim of the LECs. The local loop consists of plant and equipment, and requires virtually no inputs that are **traffic-sensitive**. The traffic on the loop is generated and serviced entirely by the IXCs. The growth in that traffic is the result of declining prices for those services, and is not due to any productivity improvements that originate with the LECs. Concerning the claim by the LECs that they should share in interstate access revenues because they advertise those services, it is not at all clear why a local monopoly should need to advertise at all; if it chooses to advertise, there is no reason why the advertising should be financed by interstate revenues. The only plausible public interest in LEC advertising would be limited to the local market served, and so should be financed by revenues drawn from that market. Insofar as the LECs advertise in anticipation of entry into the market for long-distance services, the costs should be financed from revenues from unregulated services, or from profits of the parent RBOC .

The second distortion may result from a related attempt to achieve horizontal equity among the LECs concerning growth in interstate traffic. This rationale is based on the theory that some of the LECs will experience less growth in interstate traffic than others, so that a mixed "cost recovery" plan has both per line and per minute components, as in the case of the "Balanced 50/50" formula. *To the extent that this reasoning is based on the principle that the regulated LECs should share in the revenues from the long-distance market beyond recovery of local loop costs, it is simply wrong. To the extent that the*

reasoning reflects the desire to buffer some LECs from the vagaries of the market -- differences in economic growth in different regions -- it would seem to have no role in a price cap regime.

If the g factor in the common line price cap formula is intended by the Commission to redefine output for interstate access, rather than to reflect cost allocation, then the X-Factor based on interstate access services -- the X-Factor calculated in the Performance-Based Model -- can be used in conjunction with an adjustment to the PCI formula.

There are two reasons why this is so. First, a single X-Factor is retained for all baskets, which eliminates the issue of multiple X-Factors for multiple baskets. Second the frame of reference for discussing the alteration of the formula is focused on its economic effect: modification of the way that output of interstate access services are measured and rewarded under price cap regulation.

The disjuncture between the present common line formula and the measure of customer demand for interstate access services is based on supply-side cost recovery considerations introduced by the Commission. If the disjuncture is not eliminated, the process should not be further distorted by mismeasuring the demand for interstate access services in the TFP calculation. If the Commission determines that continuation of the supply-side cost recovery considerations is desirable, those adjustments can be made after application of the demand-based X-Factor in the price cap: an "end of the pipe" adjustment that will not distort the decisions of the direct and indirect buyers of interstate services.

Issue 6b (p. 50)

> Assuming we decide to retain a separate common line formula, should we adopt a per-line common line formula or some other formula? What should the mechanics of that formula be?

Response/Comments

If the common line formula is retained in its present form -- the "Balanced 50/50" plan -- the TFP measure for interstate access can be used as the output measure as noted above in the response to Issue 6a.

However, I agree with AT&T's position in favor of a per-line common line formula. From the perspectives of telecommunication technology and regulatory economics, the **per-line formula** is preferable to the present hybrid system because the fixed costs of the local loops are not traffic-sensitive. The present formula could be adjusted to a per-line basis by modifying the g factor, which measures the ratio of growth in interstate access minutes to growth in the number of access lines. To implement the per-line concept, g/2 should be replaced by g in the present formula. The price cap formula would then accommodate the altered definition of output.

To summarize the recommendations in response to Issues 6a and 6b:

- A per-line common line formula is preferred to the present "Balanced 50/50" plan;
- the PCI formula could be adjusted to accommodate the common line price cap to the interstate X-Factor; and
- the same interstate X-Factor can and should be used for all baskets.

Issue 6c (p. 51)

> Should carrier common line rates be based on historical rather than forecasted data for end user common line revenues?

Response/Comments

It is recommended that the carrier common line rates be based on historical rates of growth of interstate access services measured over an eight-year period, extrapolated into the prospective price cap period by a linear trend.

7: EXOGENOUS COSTS

Issue 7a (p. 52)

> Is it feasible to fashion an X-Factor that will routinely include costs currently classified as exogenous and exclude costs that the Commission has determined are not exogenous?

Response/Comments

In the calculation of the target X-Factor for a prospective price cap period, it is recommended that actual historical costs be used. Where costs are added by decisions of the FCC, they should be considered part of costs for purposes of measuring TFP. Where costs are added by decisions of other regulatory authorities, their inclusion should be determined on a case-by-case basis, *with the presumption of exclusion.*

Issue 7b (p. 52)

> Would it be reasonable to limit exogenous cost treatment to changes that result in a jurisdictional cost shift?

Response/Comments

The response to Issue 7a above applies here. Only cost-affecting decisions from outside the regulatory process should be reflected as Z-Factors. Because the objective of the TFP calculation is to measure actual performance of the LECs as a gauge for their expected future performance, actual historical cost figures should be used as a rule, as has been done in the Performance-Based Model. Efforts to adjust costs retrospectively for later changes in cost allocation rules must necessarily be approximate as to their direct effects on historical costs. The direct effects working through the demand side of the market for telephone services are either ignored or, as a result of considerable effort, simulated based on debatable estimates of the response of market demand.

8: RESCHEDULING OF PERFORMANCE REVIEW

Issue 8 (p. 52)

> Regardless of whether we establish a moving average mechanism to incorporate automatically changes in unit costs into the X-Factor, would it be desirable to schedule a LEC price cap performance review, and, if so, when?

Response/Comments

As noted above, the measurement basis for TFP performance of the LECs is still in flux. I recommended above that a triennial performance review be conducted to evaluate measurement and other aspects of the LEC price cap plan, as the FCC itself has suggested. There should also be annual reviews to confirm that the plan is working as expected and

to assess the quality of service provided by the LECs. The ARMIS and tariff filing data from the LECs should be audited by the FCC, or subject to verification through information requests by interested parties. The recent information attesting to of the dubious quality of the USTA model, deriving from, among other things, its obscure capital measurement procedures, underscores the need for refining the LEC price cap plan as it proceeds. Moreover, the technological and competitive environments in telecommunications are constantly changing, so that any regulatory structure will require modifications within a few years. This is particularly true in light of the complexity and importance of the price cap regime and the large number of issues that have been identified in the current LEC performance review proceeding. Beyond measurement, service quality, and associated reporting issues, it is difficult at this time to anticipate what additional aspects of the price cap system should be included in the performance review.

As for timing, the next intensive LEC performance review should be initiated in 1998, with any resulting modifications in price cap adjustments and LEC tariff filings to be implemented as of July 1999.